



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/764,011	01/23/2004	Leo M. Pedlow JR.	SNY-T5710.01	8949
24337 7590 03/15/2010 MILLER PATENT SERVICES 2500 DOCKERY LANE RALEIGH, NC 27606				
EXAMINER CHIN, RICKY				
ART UNIT 2423		PAPER NUMBER		
MAIL DATE 03/15/2010		DELIVERY MODE PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/764,011

**Applicant(s)**

PEDLOW ET AL.

**Examiner**

RICKY CHIN

**Art Unit**

2423

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 November 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 and 44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 and 44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/GS/US)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date \_\_\_\_\_

**DETAILED ACTION**

1. In view of the Appeal Brief filed on 16 November 2009, PROSECUTION IS HEREBY REOPENED. A new grounds of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

/Andrew Y Koenig/  
Supervisory Patent Examiner, Art Unit 2423

***Response to Arguments***

2. Applicant's arguments filed November 16, 2009 have been fully considered but are moot in view of the new ground(s) of rejection(s).

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 1-4, 6, 8, 19-22, 24, and 26 are rejected under 35 U.S.C. 102(a) as being anticipated by applicants admitted prior art.

Regarding claims 1, applicants admitted prior art discloses a method of storing digital video content to facilitate trick play (See Fig.2), the content comprising intra-coded frames of video and inter-coded frames of video (See Fig.2, 74, 78, 80), the method comprising: storing the inter-coded and the intra-coded frames of the content in a first file (See Fig.2, 74 and [0050]-[0058]); storing a duplicate of intra-coded frames of the content in a second file (See Fig.2, 80 and [0050]-[0058]); storing a set of forward indices that relates the intra coded frames with the inter-coded frames in a forward direction such that playback of the second file in the order of the forward indices simulates a fast-

Art Unit: 2423

forward playback (See Fig.2, 80 and Fig. 2A, 88; [0050]-[0058]); and storing a set of reverse indices that relates the intra-coded frames with the inter-coded frames in a reverse direction such that playback of the second file in the order of the reverse indices simulates a fast-reverse playback (See Fig.2, 78 and Fig. 2B, 96; [0050]-[0058])

Regarding claim 2, applicants admitted prior art discloses all of the claim limitations of the method according to claim 1, further it teaches of generating the set of forward indices and the set of reverse indices for storage (See [0050]-[0058]).

Regarding claim 3, applicants admitted prior art discloses all of the claim limitations of the method according to claim 1, further it teaches of wherein the digital video content is MPEG encoded, wherein the intra-coded frames comprise I-frames, and wherein the inter-coded frames comprise P-frames and B-frames(It is an inherent feature of MPEG to compose of intra-coded frames (I-frames) and inter-coded frames(B,P frames) ).

Regarding claim 4, applicants admitted prior art discloses all of the claim limitations of the method according to claim 1, further it teaches of retrieving the inter-coded and the intra-coded frames from the first file to produce a normal playback stream(See [0050]-[0058]).

Regarding claim 6, applicants admitted prior art discloses all of the claim

limitations of the method according to claim 1, further it teaches of retrieving the intra-coded frames from the second file in the order of the forward indices to produce a fast forward playback stream (See[0050]-[0058]).

Regarding claim 8, applicants admitted prior art discloses all of the claim limitations of the method according to claim 1, further it teaches of retrieving the intra-coded frames from the second file in the order of the reverse indices to produce a fast reverse playback stream(See[0050]-[0058]).

Regarding claim 19, the claim has been analyzed and rejected for the same reasons set forth in the rejection of claim 1, since the inter-coded frames of the content are still stored in a first file (the original file, having the normal play content) and storing of intra-coded frames are still being stored in a second file (the extracted, I frames being stored as a duplicate).

Regarding claims 20-22, 24, and 26, the claims have been analyzed and rejected for the reasons set forth in the rejection of claims 2-4, 6, and 8.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been

Art Unit: 2423

obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 5, 7, 9-18, 23, 25, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over by applicants admitted prior art in view of Tiwari et al., US 6,327,421.

Regarding claim 5, applicant admitted prior art discloses all of the claim limitations of the method according to claim 4, further it teaches of retrieving the intra-coded frames from the second file in the order of the forward indices to produce a fast forward playback stream (See [0050]-[0058]). Applicant admitted prior art does not explicitly teach of wherein the retrieving of intra-coded frames from the second file starts at a frame near a current playback point in the normal playback stream, and wherein the frame near the current playback point is determined from the forward indices.

However, in the same field of endeavor, Tiwari teaches of wherein the retrieving of intra-coded frames from the second file starts at a frame near a current playback point in the normal playback stream, and wherein the frame near the current playback point is determined from the forward indices (See Tiwari, col. 4 lines 10-33; col 5 lines 40-50 which addresses the forward indices for fast forward. Furthermore, a frame 'near' a current playback point may be construed as any starting frame without constituting any significant lost data). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the teachings of applicant's admitted prior

Art Unit: 2423

art to incorporate wherein the retrieving of intra-coded frames from the second file starts at a frame near a current playback point in the normal playback stream, and wherein the frame near the current playback point is determined from the forward indices as taught by Tiwari for the mere benefit of providing seamless playback when transitioning between trick play features.

Regarding claim 7, the applicants admitted prior art discloses all of the claim limitations of the method according to claim 6, further it teaches of retrieving the inter-coded and intra-coded frames from the first file in the order of the forward indices to produce a normal playback stream (See [0050]-[0058]. The Applicants admitted prior art does not explicitly teach of wherein the retrieving of inter-coded and intra-coded frames from the first file starts at a frame near a current playback point in the fast forward playback stream, and wherein the frame near the current playback point is determined from the forward indices.

However, in the same field of endeavor, Tiwari teaches of wherein the retrieving of inter-coded and intra-coded frames from the first file starts at a frame near a current playback point in the fast forward playback stream, and wherein the frame near the current playback point is determined from the forward indices (See Tiwari, col. 4 lines 10-33; col 5 lines 40-50 which addresses forward indices for fast forward. Furthermore, a frame 'near' a current playback point may be construed as any starting frame without constituting any significant lost data). Therefore, it would have been obvious to one of ordinary skill in the art to have modified the teachings of the applicants admitted prior art to have incorporated wherein the retrieving of inter-coded and intra-coded frames from the first file



Art Unit: 2423

starts at a frame near a current playback point in the fast forward playback stream, and wherein the frame near the current playback point is determined from the forward indices for the mere benefit of providing seamless playback when transitioning between trick play features.

Regarding claim 9, the applicants admitted prior art teaches all of the claim limitations of the method according to claim 8, further it teaches of retrieving the inter-coded and intra-coded frames from the first file in the order of the forward indices to produce a normal playback stream (See [0050]-[0058]). The applicants admitted prior art does not explicitly teach of wherein the retrieving of inter-coded and intra-coded frames from the first file starts at a frame near a current playback point in the fast reverse playback stream, and wherein the frame near the current playback point is determined from the reverse indices.

However, in the same field of endeavor, Tiwari teaches of wherein the retrieving of inter-coded and intra-coded frames from the first file starts at a frame near a current playback point in the fast reverse playback stream, and wherein the frame near the current playback point is determined from the reverse indices (See Tiwari, col. 4 lines 10-33; col 5 lines 40-50 which addresses indices for reverse playback. Furthermore, a frame 'near' a current playback point may be construed as any starting frame without constituting any significant lost data).

Therefore, it would have been obvious to one of ordinary skill in the art to have modified the teachings of applicants admitted prior art to incorporate wherein the retrieving of inter-coded and intra-coded frames from the first file

Art Unit: 2423

starts at a frame near a current playback point in the fast reverse playback stream, and wherein the frame near the current playback point is determined from the reverse indices as taught by Tiwari for the mere benefit of providing seamless playback when transitioning between trick play features.

Regarding claim 10, the applicants admitted prior art teaches of a method of storing digital content to facilitate trick play, the content comprising intra-coded frames of video and inter-coded frames of video, the method comprising: storing the inter-coded and the intra coded frames of the content in a first file; storing the intra-coded frames of the content in a second file; storing a set of indices that relate the intra-coded frames in the first file with the intra-coded- frames in the second file (See the analysis of claim 1).

The applicants admitted prior art does not explicitly teach of wherein playback of the second file simulates fast forward playback if played back in a first order and simulates a fast rewind if played back in a second order. However, in the same field endeavor, Tiwari discloses of reversing the stored indices for reverse playback and reversing the order of sequence for reverse trick play (See Tiwari, col. 4 lines 10-33; col 5 lines 40-50). Therefore, it would have been obvious to one of ordinary skill in the art to have modified the teachings of applicants admitted prior art to have incorporated wherein playback of the second file simulates fast forward playback if played back in a first order and simulates a fast rewind if played back in a second order as taught by Tiwari for the mere benefit of reducing storage as to eliminate the need to store multiple

Art Unit: 2423

indice tables for trick play.

Regarding claims 11-18, the claims have been analyzed and rejected for the same reasons set forth in the rejections of claims 2-9.

Regarding claims 23, 25, and 27, the claims have been analyzed and rejected for the same reasons set forth in the rejections of claims 5, 7, and 9.

7. Claims 1-18 rejected under 35 U.S.C. 103(a) as being unpatentable over Lev et al., US 6,057,832 in view of Keller et al., US 7,023,924.

Regarding claims 1, Lev discloses a method of storing digital video content to facilitate trick play (See col.4 lines 45-63), the content comprising intra-coded frames of video and inter-coded frames of video (See col.5 lines 35-46 which discloses storing of the intra and inter coded frames of video), the method comprising: storing a duplicate of intra-coded frames of the content in a second file (See col.5 lines 35-45); storing a set of forward indices that relates the intra coded frames with the inter-coded frames in a forward direction such that playback of the second file in the order of the forward indices simulates a fast-forward playback (See col.7 and Figs. 3 and 4); and storing a set of reverse indices that relates the intra-coded frames with the inter-coded frames in a reverse direction such that playback of the second file in the order of the reverse indices simulates a fast-reverse playback (See col.7 and Figs. 3 and 4);. (Furthermore, the separation of such a look up table capable of referencing

Art Unit: 2423

frames from the original file with that of a second file is notoriously well-known in the art as admitted by applicant in Fig. 2A, and Fig. 2B as prior art)

Lev does not explicitly teach of storing the inter-coded and the intra-coded frames of the content in a first file. However, in the same field of endeavor, Keller teaches of storing multiple trick play files such as fast forward and reward as well as the main file consisting of the intra-coded and inter-coded content (See col.29-col. 31). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the teachings of Lev to incorporate storing the inter-coded and the intra-coded frames of the content in a first file as taught by Keller for the mere benefit for providing a means for rapidly switching between the normal file and the fast forward and fast reverse files as to provide instantaneous transitions from the normal file to the trick play file and to well as being able to avoid both overflows and underflows in the video decoder (see col. 31 lines 53- col. 32 lines 20).

Regarding claim 2, the combination discloses all of the claim limitations of the method according to claim 1, further the combination teaches of generating the set of forward indices and the set of reverse indices for storage (See Lev, col. 7 and Figs. 3 and 4; Keller, Fig. 26A).

Regarding claim 3, the combination discloses all of the claim limitations of the method according to claim 1, further the combination teaches of wherein the digital video content is MPEG encoded, wherein the intra-coded frames comprise I-frames, and wherein the inter-coded frames comprise P-frames and

Art Unit: 2423

B-frames(It is an inherent feature of MPEG to compose of intra-coded frames (I-frames) and inter-coded frames(B,P frames) ).

Regarding claim 4, the combination discloses all of the claim limitations of the method according to claim 1, further the combination teaches of retrieving the inter-coded and the intra-coded frames from the first file to produce a normal playback stream(See Keller, col. 29-col.31).

Regarding claim 5, the combination discloses all of the claim limitations of the method according to claim 4, the combination further teaches of retrieving the intra-coded frames from the second file in the order of the forward indices to produce a fast forward playback stream (See Lev, col. 7), and wherein the retrieving of intra-coded frames from the second file starts at a frame near a current playback point in the normal playback stream (See Lev, col.7 and Figs. 3 and 4), and wherein the frame near the current playback point is determined from the forward indices (See, Lev, col.7 and Figs. 3 and 4; See Keller, Fig.26A and col.29-col. 32 which discloses switching from the normal file to fast forward file and vice versa as to provide seamless continuous switching. Furthermore, a frame 'near' a current playback point may be construed as any starting frame without constituting any significant lost data)

Regarding claim 6, the combination discloses all of the claim limitations of the method according to claim 1, the combination further teaches of retrieving

Art Unit: 2423

the intra-coded frames from the second file in the order of the forward indices to produce a fast forward playback stream (See Lev, col. 7 and Figs. 3 and 4; See Keller, col. 29-32).

Regarding claim 7, the combination discloses all of the claim limitations of the method according to claim 6, further the combination teaches of retrieving the inter-coded and intra-coded frames from the first file in the order of the forward indices to produce a normal playback stream (See Keller, col. 29- col. 32), and wherein the retrieving of inter-coded and intra-coded frames from the first file starts at a frame near a current playback point in the fast forward playback stream, and wherein the frame near the current playback point is determined from the forward indices (See Keller, Fig.26A and col.29-col. 32 which discloses switching from the normal file to fast forward file and vice versa as to provide seamless continuous switching. Furthermore, a frame 'near' a current playback point may be construed as any starting frame without constituting any significant lost data)

Regarding claim 8, the combination discloses all of the claim limitations of the method according to claim 1, further the combination teaches of retrieving the intra-coded frames from the second file in the order of the reverse indices to produce a fast reverse playback stream (See Lev, col.7, and Figs. 3 and 4).

Regarding claim 9, the combination teaches all of the claim limitations of

Art Unit: 2423

the method according to claim 8, further the combination teaches of retrieving the inter-coded and intra-coded frames from the first file in the order of the forward indices to produce a normal playback stream(See Keller, col. 29 - col.32), and wherein the retrieving of inter-coded and intra-coded frames from the first file starts at a frame near a current playback point in the fast reverse playback stream, and wherein the frame near the current playback point is determined from the reverse indices (See Keller, Fig.26A and col.29-col. 32 which discloses switching from the normal file to fast forward file and vice versa as to provide seamless continuous switching. Furthermore, a frame 'near' a current playback point may be construed as any starting frame without constituting any significant lost data)

Regarding claim 10, the claim has been analyzed and rejected for the same reasons set forth in the rejection of claim 1. Furthermore, Keller teaches of (See reversing the stored indices for reverse playback (See col.31-col.32).

Regarding claims 11-18, the claims have been analyzed and rejected for the same reasons set forth in the rejections of claims 2-9.

8. Claims 19-27, and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boyle, US 6,453,115 in view of Tiwari et al., US 6,327,421 and in further view of Lev et al., US 6,057,832.

Regarding claim 19, Boyle and Tiwari discloses a method of storing digital video content to facilitate trick play, the content comprising intra-coded frames of video and inter-coded frames of video([Boyle], see abstract which discloses MPEG; Tiwari, see Abstract which also discloses MPEG). Boyle and Tiwari further disclose storing a set of forward and reverse indices that relate the intra-coded frames to the inter-coded frames in a forward direction and reverse direction for simulating fast-reverse and fast-forward playback( [Boyle], col.3 lines 1-45 and col.6 38-50, which disclose a storage subsystem and storage controller wherein the storage controller identifies a start of the intra-coded reference frames and generates an index data structure. Furthermore the controller also identifies the start of the predictive coded reference frames and generates an index structure providing data indicative of the location of the predictive coded frames for implementing trickplay functions such as fast forward and rewind; Tiwari, See col. 4 lines 10-33; col. 4 lines 59- col. 5 lines 40 which discloses the look up table used to identify the encoded pictures in the ancillary stream and determining the byte offset of the GOP to start the fast forward as well as to resume playback from the original stream, thus referencing the frames from the second file to the original file and col.5 lines 40-50 which discloses reading the pictures from the ancillary stream in the reverse order, thus the stored lookup table has the functionality of referencing frames in both a forward and a reverse direction making the lookup table a stored set of reverse and forward indices. To store the indices in two different indices composing of separate forward indices and separate reverse indices is merely a separation of the disclosed look up



Art Unit: 2423

table component which performs both functionalities. Furthermore, the separation of such a look up table capable of referencing frames from the original file with that of a second file is notoriously well-known in the art as admitted by applicant in Fig. 2A, and Fig. 2B as prior art).

However, the teachings of Boyle and Tiwari do not explicitly teach of the method comprising: at a video demand system for a television service provider: storing the inter-coded frames of the content in a first file and storing the intra-coded frames of the content in a second file and where, commands received at the tv service provider from a subscriber terminal requesting trick play modes are implemented by retrieving inter-coded frames from the first file using either the forward or the reverse indices. However, in the same field of endeavor Lev teaches of wherein at a video demand system for a television service provider (See col. 1 lines 53-55 which discloses a vod system): storing the inter-coded frames of the content in a first file and storing the intra-coded frames of the content in a second file (See col. 5 lines 22-67; col. 6 lines 45-47; and Fig. 5, elements 2 and 3) and where, commands received at the tv service provider from a subscriber terminal requesting trick play modes are implemented by retrieving inter-coded frames from the first file using either the forward or the reverse indices (See col. 5 lines 30-35 which discloses receiving user requests at the server and col. 5 lines 55-67 ; col. 6 lines 48-63; and col. 7 lines 45-60 which discloses that the pointer file includes the addresses of each of the frames in the anchor and complementary data file and for trickmode playback such as fast

Art Unit: 2423

forward to normal mode, the files are merged, thus the indices must be used to synchronize the correct order).

Therefore it would have been obvious to one of ordinary skill in the art to have modified the teachings of Boyle and Tiwari to incorporate at a video demand system for a television service provider: storing the inter-coded frames of the content in a first file and storing the intra-coded frames of the content in a second file and where, commands received at the tv service provider from a subscriber terminal requesting trick play modes are implemented by retrieving inter-coded frames from the first file using either the forward or the reverse indices as taught by Lev for the benefit of allowing trickplay functions which can be accessed more readily for display and increasing the efficiency of transmission of the video stream while still permitting display that is more flexible (Boyle, col.10 lines 54-65; col. 14 lines 1-15).

Regarding claim 20, the combination teaches all the claim limitations of the method according to claim 19, the combination further teaches of generating the set of forward indices and the set of reverse indices for storage. ([Boyle], col.3 lines 1-45 and col.6 38-50, which disclose a storage subsystem and storage controller wherein the storage controller identifies a start of the intra-coded reference frames and generates an index data structure. Furthermore the controller also identifies the start of the predictive coded reference frames and generates an index structure providing data indicative of the location of the predictive coded frames for implementing trickplay functions such as fast forward

Art Unit: 2423

and rewind; Tiwari, col. 4 lines 10-33; col 5 lines 40-50 which addresses forward and reversed indices).

Regarding claim 21, the combination teaches the claim limitations of the method according to claim 19, the combination further teaches of wherein the digital video content is MPEG encoded, wherein the intra-coded frames comprise I-frames, and wherein the intra-coded frames comprise P-frames and B-frames. ([Boyle], see abstract which discloses MPEG; Tiwari, see Abstract which also discloses MPEG).

Regarding claim 22, the combined teachings of Boyle, Tiwari and Lev teach all the claim limitations of the method according to claim 19, the combination further teaches of retrieving the inter-coded frames from the first file and the intra-coded frames from the second file to produce a normal playback stream.([Lev], col.2 lines 43-50, which discloses the merging of the anchor and complimentary files to produce normal playback)

Regarding claim 23, the combined teachings of Boyle, Tiwari and Lev teach all the claim limitations of the method according to claim 22, the combination further teaches of retrieving the intra-coded frames from the second file in the order of the forward indices to produce a fast forward playback stream, and wherein the retrieving of intra-coded frames from the second file starts at a frame near a current playback point in the normal playback stream, and wherein

Art Unit: 2423

the frame near the current playback point is determined from the forward indices. (See Boyle col.12 lines 48-60 which discloses displaying from that point in normal mode from where the skip location is desired; Tiwari, col. 4 lines 10-33; col 5 lines 40-50 which addresses forward and reversed indices. Furthermore, playing a fast forward stream from a point near the normal playback is well-known in the art as [Zdepski], See col. 3 lines 56-67 and col. 4 lines 1-16, discloses that the respective fast forward trick play stream is then transferred to the user at the appropriate point where the user was watching and further discloses that the look-up table includes a plurality of indices which reference respective frames)

Regarding claim 24, the combined teaching of Boyle, Tiwari and Lev teach all the claim limitations of the method according to claim 19, the combination further teaches of retrieving the intra-coded frames from the second file in the order of the forward indices to produce a fast forward playback stream. ([Boyle], col.3 lines 1-45 and col.6 38-50, which disclose a storage subsystem and storage controller wherein the storage controller identifies a start of the intra-coded reference frames and generates an index data structure. Furthermore the controller also identifies the start of the predictive coded reference frames and generates an index structure providing data indicative of the location of the predictive coded frames for implementing trickplay functions such as fast forward and rewind; Tiwari, col. 4 lines 10-33; col 5 lines 40-50 which addresses forward and reversed indices). Furthermore, producing fast forward playback from

Art Unit: 2423

forward indices is well known- in the art as discloses by ([Zdepski], col. 10, lines 34-46).

Regarding claim 25, the combined teachings of Boyle, Tiwari and Lev teach all the claim limitations of the method according to claim 24, the combination further teaches of retrieving the intra-coded frames from the second file and the inter-coded frames from the first file in the order of the forward indices to produce a normal playback stream, and wherein the retrieving of the inter-coded frames from the first file starts at a frame near a current playback point in the fast forward playback stream, and wherein the frame near the current playback point is determined from the forward indices. ([Boyle], col.3 lines 1-45 and col.6 38-50, which disclose a storage subsystem and storage controller wherein the storage controller identifies a start of the intra-coded reference frames and generates an index data structure. Furthermore the controller also identifies the start of the predictive coded reference frames and generates an index structure providing data indicative of the location of the predictive coded frames for implementing trickplay functions such as fast forward and rewind; Tiwari, col. 4 lines 10-33; col 5 lines 40-50 which addresses forward and reversed indices). Furthermore, it is well known- in the art as disclosed by [Zdepski], col. 3 lines 56-67 and col. 4 lines 1-16, which disclose that the respective fast forward trick play stream is then transferred to the user at the appropriate point where the user was watching).

Regarding claim 26, the combined teachings of Boyle, Tiwari, and Lev teach all the claim limitations of the method according to claim 19, the combination further teaches of retrieving the intra-coded frames from the second file in the order of the reverse indices to produce a fast reverse playback stream. ([Boyle], col.3 lines 1-45 and col.6 38-50, which disclose a storage subsystem and storage controller wherein the storage controller identifies a start of the intra-coded reference frames and generates an index data structure. Furthermore the controller also identifies the start of the predictive coded reference frames and generates an index structure providing data indicative of the location of the predictive coded frames for implementing trickplay functions such as fast forward and rewind; Tiwari, col. 4 lines 10-33; col 5 lines 40-50 which addresses forward and reversed indices). Furthermore, it is well known- in the art as discloses by ([Zdepski], col. 8 lines 33-42, which discloses that for a fast reverse trick play the verifier/Fixer 104 reverses the order of the sequence header/I frame groupings or tuples to produce a reverse play sequence).

Regarding claim 27, the combined teachings of Boyle, Tiwari, and Lev teach all the claim limitations of the method according to claim 26, the combination further teaches of retrieving the intra-coded frames from the second file and the inter-coded frames from the first file in the order of the forward indices to produce a normal playback stream, and wherein the retrieving of intra-coded frames from the second file and the inter-coded frames from the first file starts at a frame near a current playback point in the fast reverse playback

stream, and wherein the frame near the current playback point is determined from the reverse indices. ( [Boyle], col.3 lines 1-45 and col.6 38-50, which disclose a storage subsystem and storage controller wherein the storage controller identifies a start of the intra-coded reference frames and generates an index data structure. Furthermore the controller also identifies the start of the predictive coded reference frames and generates an index structure providing data indicative of the location of the predictive coded frames for implementing trickplay functions such as fast forward and rewind; Tiwari, col. 4 lines 10-33; col 5 lines 40-50 which addresses forward and reversed indices. Furthermore, it is well known- in the art as disclosed by [Zdepski], col. 3 lines 56-67 and col. 4 lines 1-16, which disclose that the respective fast reverse trick play stream is then transferred to the user at the appropriate point where the user was watching and that the look-up table includes a plurality of indices which reference respective frames).

Regarding claim 44, the claim has been analyzed and rejected for the same reasons set forth in the rejection of claim 19. Performing said method of claim 19 would imply and necessitate a storage device of claim 44.

#### ***Contact***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ricky Chin whose telephone number is 571-270-3753. The examiner can normally be reached on M-F 8:30-6:00.

Art Unit: 2423

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Koenig can be reached on 571-272-7296. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Ricky Chin/  
Patent Examiner  
AU 2423  
(571) 270-3753  
[Ricky.Chin@uspto.gov](mailto:Ricky.Chin@uspto.gov)

/Andrew Y Koenig/  
Supervisory Patent Examiner, Art Unit 2423